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Applicant

Rosenberg, Louis B.

Ser. No.

09/823,943

Fil. Date

March 30, 2001

For

Haptic Remote Control for Toys

Examiner

Cegielnik, Urszula M.

Art Unit

3712

Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

SIR:

Applicant has submitted references listed on the enclosed Information Disclosure Statement in electronic form on the enclosed compact disc. Pursuant to 37 C.F.R. §§1.56, 1.97 and 1.98, the attention of the Patent and Trademark Office is hereby directed to the references listed on the attached Form-PTO SB/08A. If the Examiner desires hard copies of some or all of these references, Applicant will provide these expeditiously upon Examiner's request.

This Information Disclosure Statement is being submitted after the mailing of a first Office Action in this application. Accordingly, enclosed please find a check in the amount of \$180 for the fees required by this action. The Commissioner is also hereby authorized to charge any additional fees under 37 C.F.R. 1.16 or 1.17 which may be required during the entire pendency of this application, or to credit any overpayment, to Deposit Account No. 16-1435. A duplicate of this sheet is attached for that purpose.

It is respectfully requested that the references listed on the attached form be expressly considered by the Examiner and be made of record in the application and appear among the "References Cited" on any patent to issue therefrom. For the documents listed in "Other Documents," Applicant has listed the dates which are shown on the documents. Applicant makes no representation as to the publication dates, if any, of the documents. Further, and although the form supplied by the PTO contains the header of "Other Prior Art," Applicant makes no representation or statement that the references listed are or are not prior art.

06/05/2003 AWONDAF1 00000071 09823943

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Date: 6/3/03

By:

Respectfully submitted,

Keg. No. 47,384

KILPATRICK STOCKTON LLP 1001 West Fourth Street Winston-Salem, North Carolina 27101 (336) 607-7311

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Attorney Docket Number

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Application Number 09/823,943 Filing Date March 30, 2001 Rosenberg, Louis B. First Named Inventor **Art Unit** 3712 **Examiner Name** Cegielnik, Urszula M. **IMMP127**

		Document Number			
Examiner	Cite No. ¹	Number Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	AA	3,220,121	11/30/1965	Cutler	
	AB	3,517,446	6/30/1970	Corlyon et al.	7
	AC	3,903,614	9/9/1975	Diamond et al	
	AD	4,236,325	10/2/1980	Hall et al.	-
	ΑE	4,513,235	4/23/1985	Acklam et al.	
	AF	4,599,070	7/8/1986	Hladky et al.	
	AG	4,708,656	11/24/1987	De Vries et al.	
	AH	4,713,007	12/15/1987	Alban	
•	Al	4,891,764	1/2/1990	McIntosh	
	AJ	5,019,761	5/28/1991	Kraft	
	AK	5,022,407	6/11/1991	Horch et al.	
	AL	5,240,417	8/31/1993	Smithson et al.	
	AM	5,271,290	12/21/1993	Fischer	
	AN	5,275,174	1/4/1994	Cook	
	AO	5,785,630	7/28/1998	Bobick et al.	
	AP	3,157,853	11/17/1964	Hirsch	
	AQ	3,497,668	2/24/1970	Hirsch	
	AR	3,902,687	6/25/1973	Hightower	
	AS	4,160,508	7/10/1979	Salsbury	·
	AT	4,581,491	4/8/1986	Boothroyd	_
	AU	4,930,770	6/5/1990	Baker	·
	AV	4,934,694	6/19/1990	McIntosh	
	AW	5,035,242	7/30/1991	Franklin	
	AX	5,038,089	8/6/1991	Szakaly	
	AY	5,078,152	1/7/1992	Bond	
	AZ	5,299,810	4/5/1994	Pierce	
	BA	5,309,140	5/3/1994	Everett	
	BB	5,334,027	8/2/1994	Wherlock	
	ВС	5,547,382	8/20/1996	Yamasaki	
	BD	5,212,473	5/18/1993	Louis	
	BE	5,466,213	11/14/1995	Hogan	
	BF	5,766,016	6/16/1998	Sinclair	
	BG	5,186,695	2/16/1993	Mangseth et al.	
	ВН	6,422,941	7/23/2002	Thorner et al.	
	BI	6,111,577	8/29/2000	Zilles et al.	

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Substitute	for form 1449A/PTO			Complete if Known		
				Application Number	09/823,943	
INFO	RMATION D	ISC	LOSURE	Filing Date	March 30, 2001	
STAT	EMENT BY	API	PLICANT	First Named Inventor	Rosenberg, Louis B.	
				Art Unit	3712	
(use as many sheets	as ne	cessary)	Examiner Name	Cegielnik, Urszula M.	
Sheet	2	of F		Attornev Docket Number	IMMP127	

	Cite No.1	Foreign Patent Document				Name of Patentee or	Pages, Columns, Lines,
		Country Code ³	Number⁴	Kind Code ^s (if known)	Publication Date MM-DD-YYYY	Applicant of Cited Document	Where Relevant Passages or Relevant Figures Appear
	BJ	EP	0349086		1/3/1990	Stork Kwant B.V.	
	вк	JP	01-003664		7/19/1990	Taito Corporation	
	BL	JP	02-109714		1/13/1992	Epoch Co. and Key- Planning Co.	
	ВМ	JP	05-193862		1/27/1995	Sega Corporation	
_	BN	JP	04-007371		8/3/1993	Taito Corporation	
							

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Substitute	for form 1449	B/PTO			Complete if Known
(,,,,,,,,,		0N DIG		Application Number	09/823,943
			CLOSURE	Filing Date	March 30, 2001
STAT	EMEN	ГВҮА	PPLICANT	First Named Inventor	Rosenberg, Louis B.
				Art Unit	3712
(use as man	y sheets as	necessary)	Examiner Name	Cegielnik, Urszula M.
Sheet	3	of	5	Attorney Docket Number	IMMP127

		OTHER PRIOR ART NON PATENT LITERATURE DOCUMENTS	
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	
	B0	BAIGRIE, "Electric Control Loading - A Low Cost, High Performance Alternative," Proceedings, pp. 247-254, November 6-8, 1990.	
	ВР	IWATA, "Pen-based Haptic Virtual Environment," 0-7803-1363-1/93 IEEE, pp 287-292, 1993.	
	BQ	RUSSO, "The Design and Implementation of a Three Degree of Freedom Force Output Joystick," MIT Libraries Archives 08/14/1990, pp. 1-131, May 1990.	
	BR	BROOKS et al., "Hand Controllers for Teleoperation - A State-of-the-Art Technology Survey and Evaluation," JPL Publication 85-11; NASA-CR-175890; N85-28559, pp. 1-84, 03/1/1985.	
	BS	JONES et al., "A perceptual analysis of stiffness," ISSN 0014-4819 Springer International (Springer-Verlag); Experimental Brain Research, Vol. 79, No. 1, pp. 150-156, 1990.	
	ВТ	BURDEA et al., "Distributed Virtual Force Feedback, Lecture Notes for Workshop on Force Display in Virtual Environments and its Application to Robotic Teleoperation," 1993 IEEE International Conference on Robotics and Automation, pp. 25-44, 05/02/1993.	
	BU	SNOW et al., " Model-X Force-Reflecting-Hand-Controller," NT Control No. MPO-17851; JPL Case No. 5348, pp. 1-4, 06/15/1989.	
	BV	OUH-YOUNG, " Force Display in Molecular Docking," Order No. 9034744, p. 1-369, 1990.	
	вw	TADROS, " Control System Design for a Three Degree of Freedom Virtual Environment Simulator Using Motor/Brake Pair Actuators*, MIT Archive @ Massachusetts Institute of Technology, pp. 1-88, February 1990.	
	вх	CALDWELL et al., "Enhanced Tactile Feedback (Tele-Taction) Using a Multi-Functional Sensory System," 1050-4729/93, pp. 955-960, 1993.	
	BY	ADELSTEIN, " Design and Implementation of a Force Reflecting Manipulandum for Manual Control research," DSC-Vol. 42, Advances in Robotics, Edited by H. Kazerooni, pp. 1-12, 1992.	
	BZ	GOTOW et al., " Controlled Impedance Test Apparatus for Studying Human Interpretation of Kinesthetic Feedback," WA11-11:00, pp. 332-337	
	CA	STANLEY et al., " Computer Simulation of Interacting Dynamic Mechanical Systems Using Distributed Memory Parallel Processors," DSC-Vol. 42, Advances in Robotics, pp. 55-61, ASME 1992.	
	СВ	RUSSO, " Controlling Dissipative Magnetic Particle Brakes in Force Reflective Devices," DSC-Vol. 42, Advances in Robotics, pp. 63-70, ASME 1992.	

Examiner	Date	
Signature	Considered	

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Substitute	for form 1449	B/PTO		Complete if Known		
(NIEO)		0N DIG	OLOCUDE	Application Number	09/823,943	
			CLOSURE	Filing Date	March 30, 2001	
STAT	EMEN	T BY A	PPLICANT	First Named Inventor	Rosenberg, Louis B.	
				Art Unit	3712	
((use as mai	ny sheets as	necessary)	Examiner Name	Cegielnik, Urszula M.	
Sheet	4	of	5	Attorney Docket Number	IMMP127	

_		OTHER PRIOR ART NON PATENT LITERATURE DOCUMENTS
Examiner Initials *	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
	СС	KONTARINIS et al., "Display of High-Frequency Tactile Information to Teleoperators," Telemanipulator Technology and Space Telerobotics, Won S. Kim, Editor, Proc. SPIE Vol. 2057, pp. 40-50, Sep. 7-9, 1993.
· -·	CD	PATRICK et al., "Design and Testing of A Non-reactive, Fingertip, Tactile Display for Interaction with Remote Environments," Cooperative Intelligent Robotics in Space, Rui J. deFigueiredo et al., Editor, Proc. SPIE Vol. 1387, pp. 215-222, 1990.
	CE	ADELSTEIN, "A Virtual Environment System For The Study of Human Arm Tremor," Ph.D. Dissertation, Dept. of Mechanical Engineering, MIT, June 1989.
	CF	BEJCZY, "Sensors, Controls, and Man-Machine Interface for Advanced Teleoperation," Science, Vol. 208, No. 4450, pp. 1327-1335, 1980.
	CG	BEJCZY, "Generalization of Bilateral Force-Reflecting Control of Manipulators," Proceedings Of Fourth CISM-IFTOMM, Sep. 8-12, 1981.
	СН	MCAFFEE, "Teleoperator Subsystem/Telerobot Demonsdtrator: Force Reflecting Hand Controller Equipment Manual," JPL D-5172, pp. 1- 50, A1-A36, B1-B5, C1-C36, January 1988.
	CI	MINSKY, "Computational Haptics: The Sandpaper System for Synthesizing Texture for a Force-Feedback Display," Ph.D. Dissertation, MIT, June 1995.
	Cl	JACOBSEN et al., "High Performance, Dextrous Telerobotic Manipulator With Force Reflection," Intervention/ROV '91 Conference & Exposition; Hollywood, Florida, May 21-23, 1991.
	СК	SHIMOGA, "Finger Force and Touch Feedback Issues in Dexterous Telemanipulation," Proceedings of Fourth Annual Conference on Intelligent Robotic Systems for Space Expploration, Rensselaer Polytechnic Institute, Sep. 30 - Oct. 1, 1992.
	CL	IBM Technical Disclosure Bullein, "Mouse Ball-Actuating Device With Force and Tactile Feedback," Vol. 32, No. 9B, February 1990.
	СМ	TERRY et al., "Tactile Feedback In A Computer Mouse," Proceedings of Fouteenth Annual Northeast Bioengineering Conference, University of New Hampshire, March 10-11, 1988.
	CN	HOWE, "A Force-Reflecting Teleoperated Hand System for the Study of Tactile Sensing in Precision Manipulation," Proceedings of the 1992 IEEE International Conference on Robotics and Automation, Nice, France, May 1992.
	со	EBERHARDT et al., "OMAR - A Haptic display for speech perception by deaf and deaf-blind individuals," IEEE Virtual Reality Annual International Symposium, Seattle, WA, Sep. 18-22, 1993.
	СР	RABINOWITZ et al., "Multidimensional tactile displays: Identification of vibratory intensity, frequency, and contactor area," Journal of The Acoustical Society of America, Vol. 82, No. 4, Ocotober 1987.
Examiner		Date

Examiner Date Signature Considered

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			CLOSURE	Filing Date	March 30, 2001
STAT	EMEN	TBY A	PPLICANT	First Named Inventor	Rosenberg, Louis B.
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1	(use as mar	ny sheets as	necessary)	Examiner Name	Cegielnik, Urszula M.
Sheet	5	of	5	Attorney Docket Number	IMMP127

		OTHER PRIOR ART NON PATENT LITERATURE DOCUMENTS
Examiner Initials *	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
	cq	BEJCZY et al., "Kinesthetic Coupling Between Operator and Remote Manipulator," International Computer Technology Conference, The American Society of Mechanical Engineers, San Francisco, CA, August 12-15, 1980.
······································	CR	BEJCZY et al., "A Laboratory Breadboard System For Dual-Arm Teleoperation," SOAR '89 Workshop, JSC, Houston, TX, July 25-27, 1989.
	cs	OUH-YOUNG, "A Low-Cost Force Feedback Joystick and Its Use in PC Video Games," IEEE Transactions on Consumer Electronics, Vol. 41, No. 3, August 1995.
	СТ	MARCUS, "Touch Feedback in Surgery," Proceedings of Virtual Reality and Medicine The Cutting Edge, Sep. 8-11, 1994.
	cu	BEJCZY, et al., "Universal Computer Control System (UCCS) For Space Telerobots," CH2413-3/87/0000/0318501.00 1987 IEEE, 1987.
	cv	AUKSTAKALNIS et al., "Silicon Mirage: The Art and Science of Virtual Reality," ISBN 0-938151-82-7, pp. 129-180, 1992.
· · · · · ·	cw	EBERHARDT et al., "Including Dynamic Haptic Perception by The Hand: System Description and Some Results," DSC-Vol. 55-1, Dynamic Systems and Control: Volume 1, ASME 1994.
	сх	GOBEL et al., "Tactile Feedback Applied to Computer Mice," International Journal of Human-Computer Interaction, Vol. 7, No. 1, pp. 1-24, 1995.
	CY	PIMENTEL et al., "Virtual Reality: through the new looking glass," 2 nd Edition; McGraw-Hill, ISBN 0-07-050167-X, pp. 41-202, 1994.
	cz	"Cyberman Technical Specification," Logitech Cyberman SWIFT Supplement, 4/5/1994.
	DA	OUHYOUNG et al., "The Development of A Low-Cost Force Feedback Joystick and Its Use in the Virtual Reality Environment," Proceedings of the Third Pacific Conference on Computer Graphics and Applications, Pacific Graphics '95, Seoul, Korea, 21-24 August 1995.
	DB	KACZMAREK et al., "Tactile Displays," Virtual Environment Technologies.
	DC	SCANNELL, "Taking a Joystick Ride," Computer Currents, Boston Edition, Vol. 9, No. 11, November 1994

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